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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
08/886,625	07/01/97	SHENOY	N	SNSY-A1996-0

LM02/0519

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EXAMINER	
GARBOWSKI, L	
ART UNIT	**PAPER NUMBER**
2763	2

DATE MAILED: 05/19/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/886,625	SHENOY ET AL.
Examiner	**Group Art Unit**
Salbook	2763

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 7/1/97.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-17 is/are pending in the application.

Of the above claim(s)_____ is/are withdrawn from consideration.

☐ Claim(s)_____ is/are allowed.

☒ Claim(s) 1-17 is/are rejected.

☐ Claim(s)_____ is/are objected to.

☐ Claim(s)_____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on_____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on_____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number)_____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received:_____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s)._____

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other_____

Office Action Summary

1. This application has been examined.

2. The drawings submitted with this application were declared informal by the applicant. Accordingly they have not been reviewed by a draftsperson at this time. When formal drawings are submitted, the draftsperson will perform a review. Direct any inquiries concerning drawing review to the Drawing Review Branch at (703) 305-8404.

3. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. As per claim 1, the preamble recites a "method for placing cells", yet the body of the claim does not adequately reflect this scope. The claim appears to merely establish "partitions", thus the claim is incomplete, vague and indefinite.

5. As per claim 2, it is not clear what is intended by "a placement area" [line 2], since it is not clear from claim 1 that "placing" is established. Thus, the claim is confusing, vague and indefinite.

6. As per claim 3, there is no antecedent basis for "the mapped netlist" [line 3]. Thus, the claim is confusing, vague and indefinite.

7. As per claim 10, the preamble recites "a rough placement logic for placing cells", yet the body of the claim does not adequately reflect this scope. The claim appears to merely establish "partitions", thus the claim is incomplete, vague and indefinite. In addition, there

is no antecedent basis for "a placement area" [line 8] or "partition sizes" [line 10]. Thus, the claim is further confusing.

8. As per claim 15, the preamble recites a "placement process", yet the body of the claim does not adequately reflect this scope. The claim appears to merely establish "partitions", thus the claim is incomplete, vague and indefinite. In addition, there is no antecedent basis for "cell location information" [line 6] or "a placement area" [line 7]. Thus, the claim is further confusing.

9. As per claim 16, there is no antecedent basis for "the mapped netlist" [line 3]. Thus, the claim is confusing, vague and indefinite.

10. The remaining claims, though not specifically mentioned, are rejected for incorporating the errors of their respective base claims by dependency.

11. The following rejections are based on the examiner's best interpretation of the claims in view of the issues raised above.

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

13. Claims 1-3, 5-10 and 12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Hathaway et al. [U.S. Patent #5,757,657].

14. As per claim 1, Hathaway et al. disclose a computer controlled and implemented method for placing cells [see the entire document, at least as cited] comprising a) generating a netlist through a synthesis process [column 2, lines 35-37]; b) executing a cell separation process according to the netlist [column 2, lines 52-53]; c) changing the netlist [column 2, lines 17-19]; d) modifying spacings of the cells responsive to changes made to the netlist [column 3, lines 17-28, 45-64]; e) partitioning the cells into a plurality of partitions [column 2, lines 39-45]; and f) determining whether the partitions have converged, wherein the above steps are repeated if convergence is not yet achieved [column 2, lines 45-49]. As per claim 2, Hathaway et al. further disclose changing size in response to changes made to the netlist [column 3, lines 17-28; column 5, lines 51-65; column 7, lines 27-35]. As per claim 3, Hathaway et al. further disclose inputting HDL, user constraints, and technology data into the synthesis process [column 1, lines 13-17; see also applicant's specification at page 2, line 24 through page 3, line 1, page 7, lines 15-22]. As per claim 5, Hathaway et al. further disclose wherein the cell separation process assigns an (x,y) location to each of the cells of the netlist [column 2, lines 52-53]. As per claim 6, Hathaway et al. further disclose wherein the netlist is changed based on cell location information [column 2, lines 17-19, 50-54; column 3, lines 44-50]. As per claim 7, Hathaway et al. further disclose wherein a change to the netlist includes sizing a gate up or down [column 2, lines 17-19]. As per claim 8, Hathaway et al. further disclose wherein a change to the netlist includes adding or deleting one or more gates [column 2, lines 17-

19]. As per claim 9, Hathaway et al. further disclose wherein convergence is achieved when each partition has a number of cells less than a pre-determined value [column 7, lines 30-35].

15. As per claim 10, Hathaway et al. disclose a computer system programmed to include a rough placement logic for placing cells [see the entire document, at least as cited] comprising means for assigning locations to each of the cells of the netlist [column 2, lines 52-53]; means for changing the netlist in response to cell location information [column 2, lines 17-19], wherein an area is allowed to be scaled in response to changes made to the netlist [column 5, lines 51-65]; means for changing sizes, wherein the changes result in corresponding changes to the cells [column 3, lines 17-28, 45-64]; means for partitioning the cells into a plurality of separate partitions [column 2, lines 39-45]; and means for determining whether the partitions have converged [column 2, lines 45-49]. As per claim 12, Hathaway et al. further disclose wherein a change to the netlist includes sizing a gate up or down [column 2, lines 17-19]. As per claim 13, Hathaway et al. further disclose wherein a change to the netlist includes adding or deleting one or more gates [column 2, lines 17-19]. As per claim 14, Hathaway et al. further disclose wherein convergence is achieved when each partition has a number of cells less than a pre-determined value [column 7, lines 30-35].

16. As per claim 15, Hathaway et al. disclose a computer-readable medium having stored thereon instructions for causing a computer to implement a placement process [see the

entire document, at least as cited] comprising a) generating a netlist through a synthesis process [column 2, lines 35-37]; b) executing a cell separation process according to the netlist [column 2, lines 52-53]; c) changing the netlist [column 2, lines 17-19]; d) altering size of an area in response to a change made to the netlist [column 3, lines 17-28, 45-64]; e) spacing the cells apart according to a spacer process [column 3, lines 17-28, 45-64]; f) partitioning the cells into a plurality of partitions [column 2, lines 39-45]; and g) determining whether the partitions have converged, wherein the above steps are repeated if convergence is not yet achieved [column 2, lines 45-49]. As per claim 16, Hathaway et al. further disclose inputting HDL, user constraints, and technology data into the synthesis process [column 1, lines 13-17; see also applicant's specification at page 2, line 24 through page 3, line 1, page 7, lines 15-22].

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 4, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hathaway et al. in view of applicant's specification.

19. Hathaway et al. disclose the features from which the claims depend, but do not teach a mapped netlist. The specification teaches that "any of the synthesis tools commercially available ... can be used to generate the mapped netlist" [page 7, lines 16-18]. Therefore,

considering the high level of ordinary skill in the art, a person of ordinary skill in the art at the time of the invention would have found it obvious to modify the Hathaway et al. teaching to include a mapped netlist because the ready availability of this feature facilitates and uniforms the design placement process.

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is strongly encouraged to review and consider the following citations [particularly the underlining within each reference].

21. Rostoker [U.S. Patent #5,532,934] at columns 25 through 31.

22. Dunlop et al. [U.S. Patent #4,577,276] at columns 3 through 6.

23. Antreich et al. [U.S. Patent #5,267,176], the entire document.

24. Modarres et al. [U.S. Patent #4,918,614], the entire document.

25. Jones et al. [U.S. Patent #5,629,860], the entire document.

26. Cheng [U.S. Patent #5,847,965], the entire document.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Marie Garbowski whose telephone number is (703) 305-9753.

28. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Leigh Marie Garbowski
May 6, 1999

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER